

July 12, 2022

Ms. Jamie Schwartz,
Remedial Project Manager
United States Environmental Protection Agency, Region 7
11201 Renner Boulevard
Lenexa, KS 66219

**Subject: Seven Day Notification Report
West Lake Landfill Operable Unit 2 (OU-2)
Bridgeton, Missouri**

Dear Ms. Schwartz:

Geosyntec Consultants, Inc. (Geosyntec) is submitting a notification report on behalf of Bridgeton Landfill, LLC (Respondent) describing the immediate actions taken to ensure the protection of employee and public health and safety and the environment after the detection of methane exceeding the limits specified in the Explosive Gas Monitoring Plan (EGMP), dated July 2021, in the Inactive Sanitary Landfill (ISL) unit of OU-2. This notification is being submitted to the U.S. Environmental Protection Agency (USEPA) and Missouri Department of Natural Resources (MDNR) within seven days of detection, per the EGMP.

Overview of Event

On July 5, 2022, perimeter landfill gas monitoring wells 1, 2, and 3 (Id Nos. BRISL001, BRISL002 and BRISL003) measured a stabilized methane concentration of 11.5 percent (%), 5.9% and 25.5%, respectively. These methane concentrations are greater than 50% of the lower explosive limit (LEL) or two and one-half percent (2.5%) by volume.

Perimeter landfill gas monitoring well 4 (Id No. BRISL004) continues to measure elevated levels of methane (July 5, 2022, stabilized methane reading of 28.1%). Perimeter landfill gas monitoring wells 5 and 6 (Id Nos. BRISL005 and BRISL006) had stabilized methane concentrations equal to zero.

Following the detection of methane, Respondent immediately began notifications and corrective action procedures as discussed in the EGMP, including evaluating the potential for methane accumulation in on-site and off-site buildings within 1,000 feet of the affected perimeter landfill gas monitoring wells and evaluating measures to reduce methane concentrations. The evaluation included the following actions:

- Monitoring for the presence of methane in structures (when permitted by occupant);
- Evaluating potential pathways for below grade methane migration;
- Measuring liquid levels within the perimeter ISL LFG monitoring wells;
- Reviewing groundwater elevations in OU-3 shallow groundwater wells; and
- Evaluating if there are barriers present that would prevent below grade methane migration.

Notifications

Following the detection of methane, Respondent immediately began corrective action procedures. This included notifying the USEPA, MDNR Federal Facilities, MDNR Waste Management Program, St. Louis County Department of Public Health, Pattonville Fire Protection District and notifying utilities and property owners and/or occupants located within 1,000 feet of perimeter landfill gas monitoring wells 1, 2 and 3.

There is one off-site structure (13330 Lakefront Drive, TCG Earth City LLC) located within 1,000 feet of perimeter landfill gas monitoring wells 1, 2 and 3, as shown on **Figures 1 - 4**. There are no other on-site or off-site structures within 1,000 feet, to the north, south or east of perimeter landfill gas monitoring wells 1, 2, and 3. As discussed below, if the property, but not the off-structure, was within the 1,000 feet radius, the Respondent still notified the occupant.

Respondent visited buildings on properties where any portion of the property is within the 1,000-foot radius of perimeter landfill gas monitoring wells 1, 2, and 3. Respondent provided verbal notification of the presence of methane in perimeter landfill gas monitoring wells 1, 2, and 3 to the on-site occupants of these buildings, and offered to scan the building for methane, offered to install a methane monitor with alarm, and provided occupants with Respondent's 24/7 contact information. One occupant (Ford Training Center, 13376 Lakefront Drive) permitted the Respondent to scan the building, and no methane was detected at any location during the building scans. Another occupant (Missouri Asphalt – 13570 St. Charles Rock Road) will allow for gas monitoring on July 13, 2022. No occupants accepted the offer to install a methane monitor with alarm.

A RKI GX-2012 gas analyzer with a resolution of 0.1 percent for methane was used for each scan. Respondent scanned the building(s) listed above for subsurface methane migration including, but not limited to, utility penetrations, basements, sumps and/or at the interior perimeter. As discussed above, no methane was detected.

All owners within 1,000 feet were shipped written notification, shipped overnight with delivery confirmation anticipated on July 13, 2022. A summary of these owner and occupant notifications is provided in **Attachment A**.

Evaluation of Potential for Methane Accumulation in Buildings

Respondent does not believe there is any current threat of methane accumulation in buildings. The potential subsurface pathways for landfill gas migration include unsaturated alluvial deposits underlying and surrounding the ISL and utility conduits, including a fiber optic system and sanitary sewer located west and south of the ISL.

The approximate base or waste invert of the ISL varies from 448.2 to 425.0 fmsl (feet mean sea level) based on previous waste boring data included in the EGMP. Recent depth of water measurements, obtained on July 11, 2022, in the perimeter landfill gas monitoring wells measured depths to groundwater of 19.45 to 22.63 feet below ground surface (fbgs), which corresponds to groundwater elevation range of 431.77 to 433.43 fmsl (see **Table 1**). With the exception of BRISL005 (which has not measured methane concentration greater than 2.5%), all other perimeter landfill gas groundwater elevations were within 0.5 feet of the October 2021 groundwater elevations.

This estimated groundwater elevation range is consistent with the Alluvial December 2020 through December 2021 monthly groundwater elevations (see **Attachment B**) for the ISL that was measured by the OU-3 team.

Table 1					
Perimeter Landfill Gas Monitoring Well Depth to Groundwater					
LFG Monitoring Well ID	Top of PVC Casing Surface Elevation (fmsl)	Oct. 2021 Depth to Groundwater (ft)^{1,2}	Oct. 2021 Groundwater Elevation (fmsl)	July 2022 Depth to Groundwater (ft)^{1,2}	July 2022 Groundwater Elevation (fmsl)
BRISL001	452.86	21.35	431.51	21.09	431.77
BRISL002	453.28	21.74	431.54	21.45	431.83
BRISL003	454.01	22.57	431.44	22.22	431.79

Table 1 Perimeter Landfill Gas Monitoring Well Depth to Groundwater					
LFG Monitoring Well ID	Top of PVC Casing Surface Elevation (fmsl)	Oct. 2021 Depth to Groundwater (ft)^{1,2}	Oct. 2021 Groundwater Elevation (fmsl)	July 2022 Depth to Groundwater (ft)^{1,2}	July 2022 Groundwater Elevation (fmsl)
BRISL004	454.69	22.98	431.71	22.63	432.06
BRISL005	452.77	18.34	434.43	19.45	433.32
BRISL006	452.96	19.70	433.26	19.53	433.43
Notes: 1. Depth to groundwater measurements were taken on October 6, 2021 and July 11, 2022. 2. Depth to groundwater is from the top of PVC casing.					

Based on this information, it has been assessed that the lower portion of the alluvial deposits are saturated, and off-site landfill gas migration cannot occur below these elevations (i.e. 431 to 433 fmsl).

Corrective Action Plan

A corrective action plan (CAP) for perimeter LFG monitoring well, dated February 2022, was submitted to the USEPA and MDNR and is pending approval. An amendment to the pending CAP, which will include landfill gas monitoring wells 1, 2 and 3 will be submitted to the USEPA and MDNR within 45 days of the detection event in accordance with the EGMP.

Perimeter LFG Well Monitoring Well Schedule

Bridgeton will revise the monitoring schedule so that perimeter landfill gas monitoring wells 1, 2 and 3 are monitored on a weekly basis per Sections 2.17 and 2.18 of the EGMP. Perimeter landfill gas monitoring well 4 will continue to be monitored on a weekly basis.

Ms. Schwartz, USEPA
July 12, 2022
Page 5

Should you have any questions, comments, or concerns regarding this submittal, please contact me at (630) 203-3349.

Sincerely,

Geosyntec Consultants, Inc.



Jesse P. Varsho, P.E.
Principal Engineer

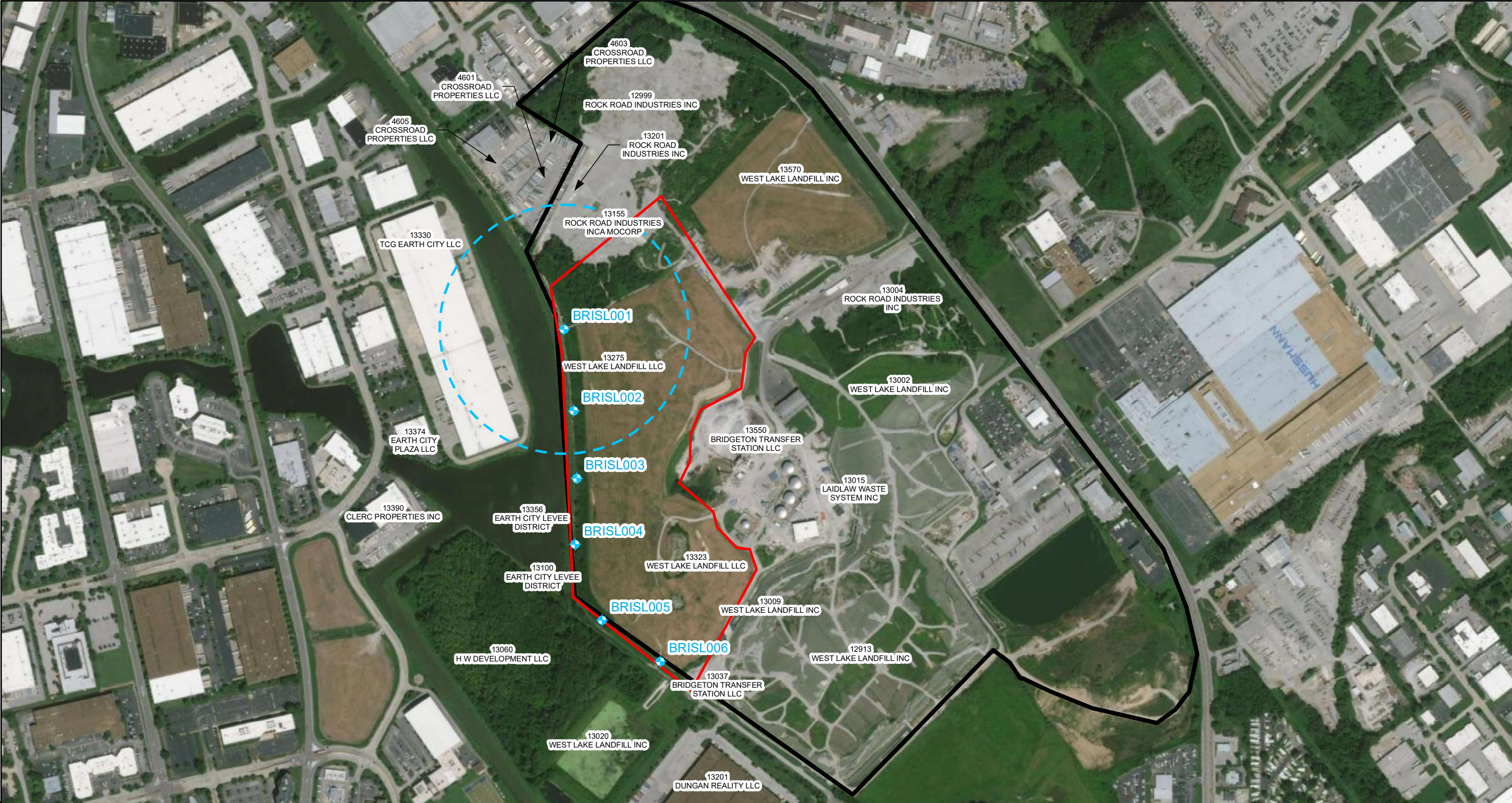
Attachment:

Copies to:

Mr. Ryan Seabaugh, Federal Facilities Section, Missouri Department of Natural Resources (MoDNR)
Mr. Chris Nagel, Waste Management Program, MoDNR
Mr. Paul Rosasco, Engineering Management Support, Inc. (EMSI)
Ms. Dana Sincox, Bridgeton Landfill LLC
Mr. Anthony Kimutis, Bridgeton Landfill LLC
Mr. Michael Lambrich, Bridgeton Landfill LLC
Ms. Ally Cunningham, Lathrop GPM
Ms. Cynthia Teel, Lathrop GPM
Ms. Victoria Warren, (on behalf of Bridgeton Landfill, LLC)
Mr. Jim Stout, Geosyntec
Ms. Michele Clark, Weaver Consulting Group

FIGURES

1,000 RADII MAPS



Legend

- Monitoring Well Locations
- LFG Well BRISL001 1,000 ft Radius
- OU-2 ISL Boundary
- Site Outline

N

0 680 Feet

1000 ft Radius around LFG Well BRISL001

West Lake Landfill
Bridgeton, Missouri

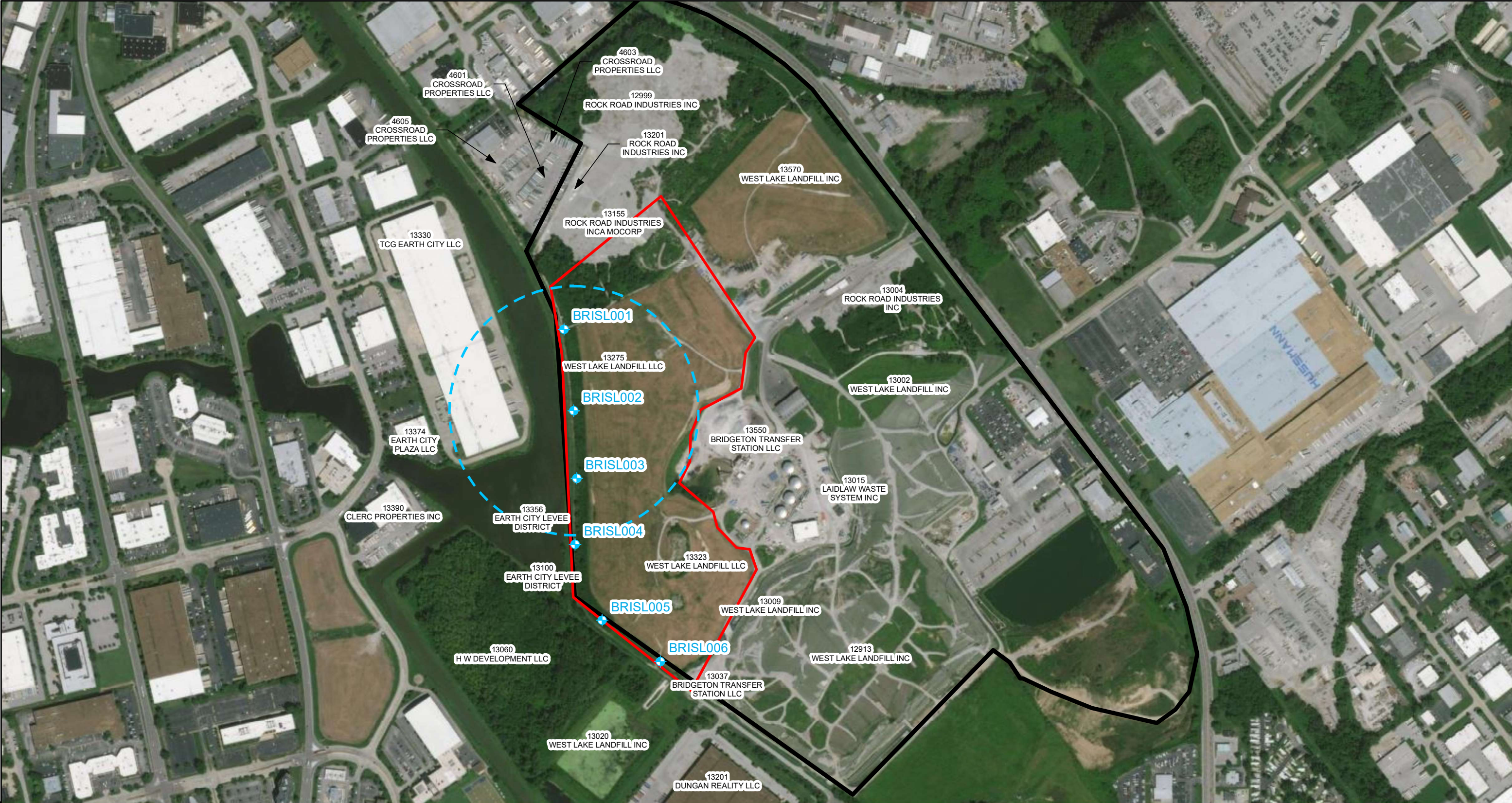
Geosyntec
consultants

Figure

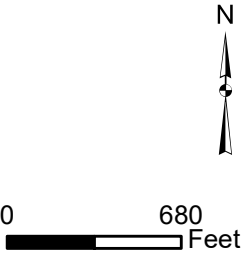
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Columbus, OH

July 2022



- Legend**
- Monitoring Well Locations
 - LFG Well BRISL002 1,000 ft Radius
 - OU-2 ISL Boundary
 - Site Outline



1000 ft Radius around LFG Well BRISL002

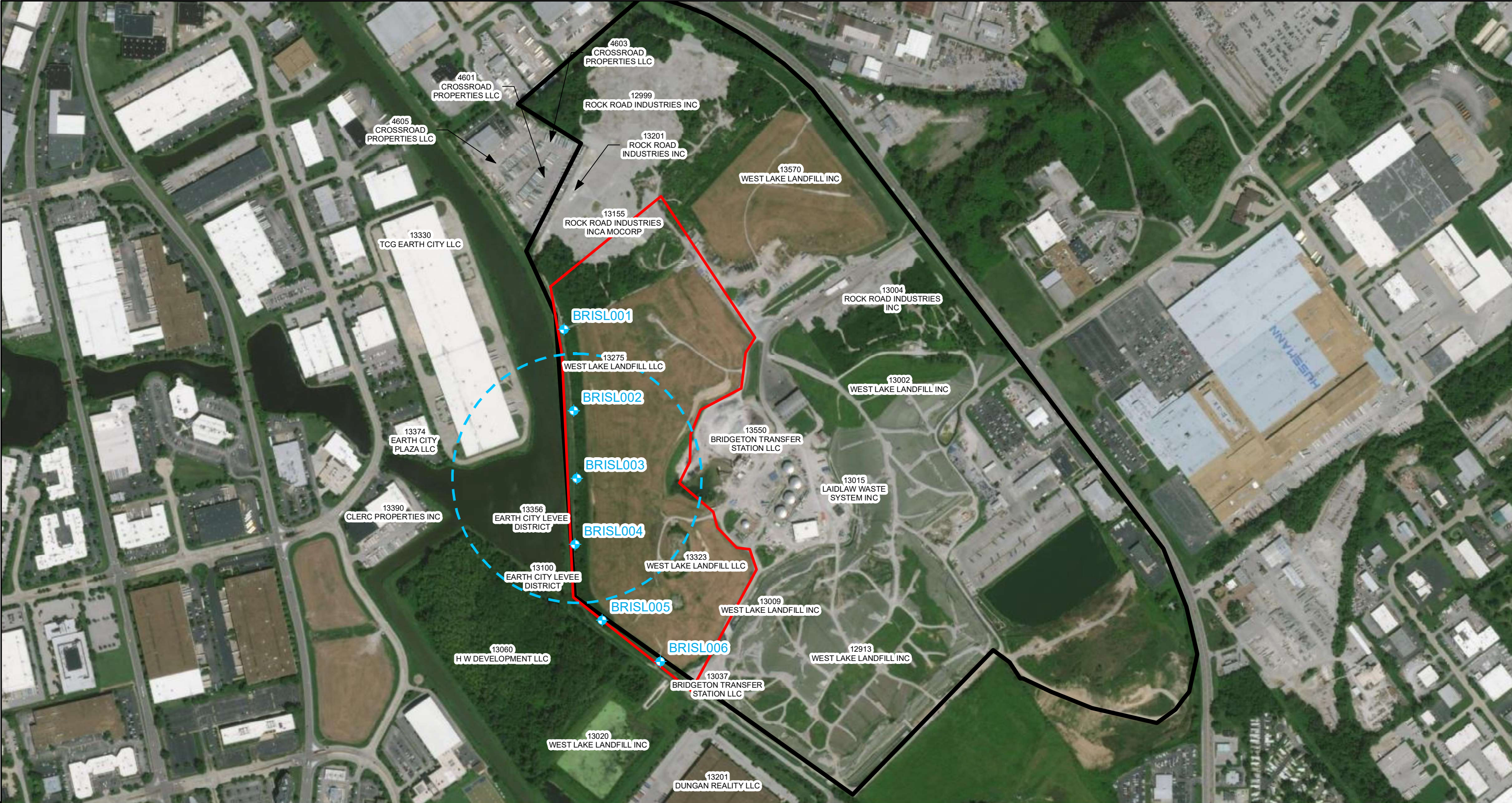
West Lake Landfill
Bridgeton, Missouri

Geosyntec
consultants

Columbus, OH

July 2022

Figure
2



- Legend**
- Monitoring Well Locations
 - LFG Well BRISL003 1,000 ft Radius
 - OU-2 ISL Boundary
 - Site Outline



0 680 Feet

1000 ft Radius around LFG Well BRISL003

West Lake Landfill
Bridgeton, Missouri

Geosyntec
consultants

Columbus, OH

July 2022

Figure
3

ATTACHMENT A

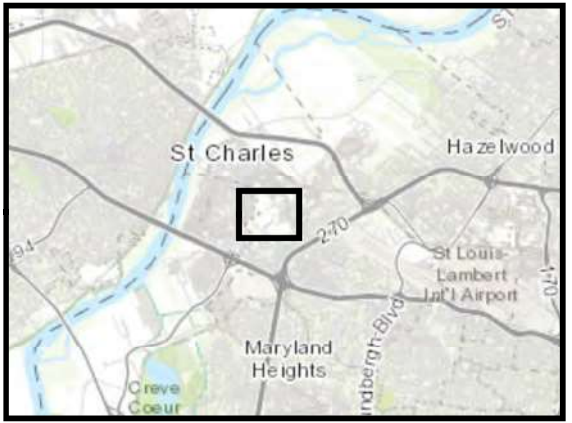
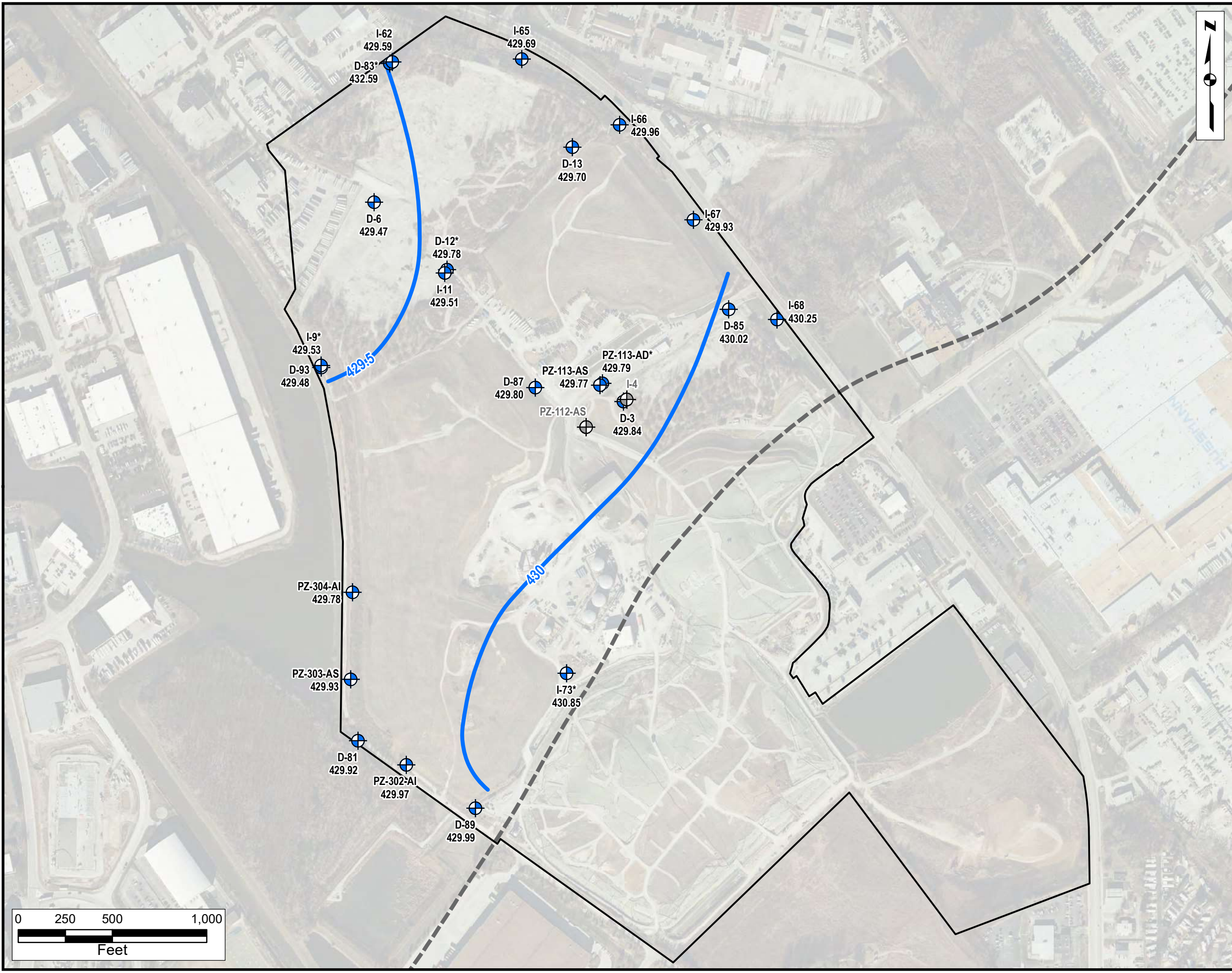
NOTIFICATION SUMMARY

Perimeter LFG Well ID	Property Address	Occupant	Owner	Owner Address	Date of Owner Notification	Date of Occupant(s) Notification	Monitoring Offered / Contact Information Provided	Notes
BRISL001, BRISL002, BRISL003, BRISL004	13330 Lakefront Dr, 63045	ITF Group	Tcg Earth City LLC	40 Grove St Suite 250, Wellesley, MA 02482	7/13/2022	7/8/2022	7/8/2022	Verbal notification made to Loren Morrison (occupant). Offered to monitor and install a detector. Declined at the time of arrival but would contact us for a follow up visit.
BRISL001, BRISL002, BRISL003, BRISL004	13376 Lakefront Dr, 63045	Ford Training Center	Earth City Plaza LLC	13374 Lakefront Dr, Earth City, MO 63045	7/13/2022	7/8/2022	7/8/2022	Verbal notification made to Edward Clevenson (occupant). Ford Training Center portion of building monitored with RKI-GX2012 PID. No methane detected.
BRISL001, BRISL002, BRISL003, BRISL004	13378 Lakefront Dr, 63045	Beleaf	Earth City Plaza LLC	13374 Lakefront Dr, Earth City, MO 63045	7/13/2022	7/8/2022	7/8/2022	Phone call made to Stephanie (occupant). Left a voicemail with updated contact information. Follow up needed.
BRISL003, BRISL004	13390 Lakefront Dr, 63045	Dodge Moving and Storage	Clerc Properties Inc, A Missouri Corp	13390 Lakefront Dr, Earth City, MO 63045	7/13/2022	7/8/2022	7/8/2022	Phone call notification made to Tom Linhares (occupant). Arrived to Dodge Moving and Storage building/warehouse on 7/8 to notify Tom Linhares. Tom was unavailable upon arrival, but left updated contact information for Tom for follow up.
BRISL003, BRISL004	13060 Old St Charles Rd, 63044	NA	HW Development LLC	3301 S Rider Trl 150, Earth City, MO 63045	7/13/2022	NA	NA	No structures
BRISL001, BRISL002, BRISL003, BRISL004	13356 Boenker Ln, 63044	NA	Earth City Levee District	4103 N Rider Trl, Earth City, MO 63045	7/13/2022	NA	NA	No structures
BRISL003, BRISL004	13100 Boenker Ln, 63044	NA	Earth City Levee District	4103 N Rider Trl, Earth City, MO 63045	7/13/2022	NA	NA	No structures
BRISL001, BRISL002, BRISL003, BRISL004	13570 St Charles Rock Rd, Bridgeton, MO 63044	Missouri Asphalt	Bridgeton Landfill LLC	13570 St Charles Rock Rd, Bridgeton, MO 63044	7/8/2022	7/12/2022	7/12/2022	Verbal notification attempted for occupant Chris Simpson on 7/8/2022. Contact made on 7/12/2022. Will monitor buildings for occupant on 7/13/2022.
BRISL001	4601 Crossroads Industrial Dr, 63044	NA	Crossroad Properties LLC	4601 Crossroads Industrial Dr, 63044	7/13/2022	NA	NA	No structures
BRISL001	4603 Crossroads Industrial Dr, 63044	NA	LD Reality, LLC	4603 Crossroads Industrial Dr, 63044	7/13/2022	NA	NA	No structures
BRISL001	4605 Crossroads Industrial Dr 63044	AAA Trailer Services, Inc.	LD Reality, LLC	4605 Crossroads Industrial Dr 63044	7/13/2022	7/6/2022	7/6/2022	Verbal notification made to John O'Brien with AAA Trailer Services, Inc. Offered monitoring and explosive gas monitor. Occupant declined both.

Company	Date of Utility Notification	Monitoring Offered / Contact Information Provided	Notes
AT&T	7/11/2022	7/11/2022	RW left voicemail notifying them of LFG detection.
Spire Energy	7/11/2022	7/11/2022	RW left voicemail notifying them of LFG detection. JPV called back Nick Eggert and answered his questions about location and timing.
Metropolitan St. Louis Sewer District	7/5/2022	7/5/2022	
Ameren	7/11/2022	7/11/2022	RW left voicemail notifying them of LFG detection.
Pattonville Fire Protection District	7/5/2022	7/5/2022	JPV talked with Chief Kevin Stillman to address his questions on July 11

ATTACHMENT B

ALLUVIAL POTENTIOMETRIC MAPS



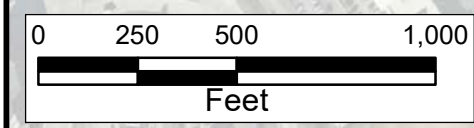
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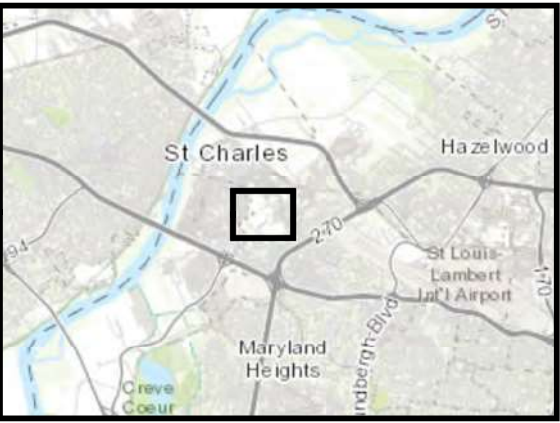
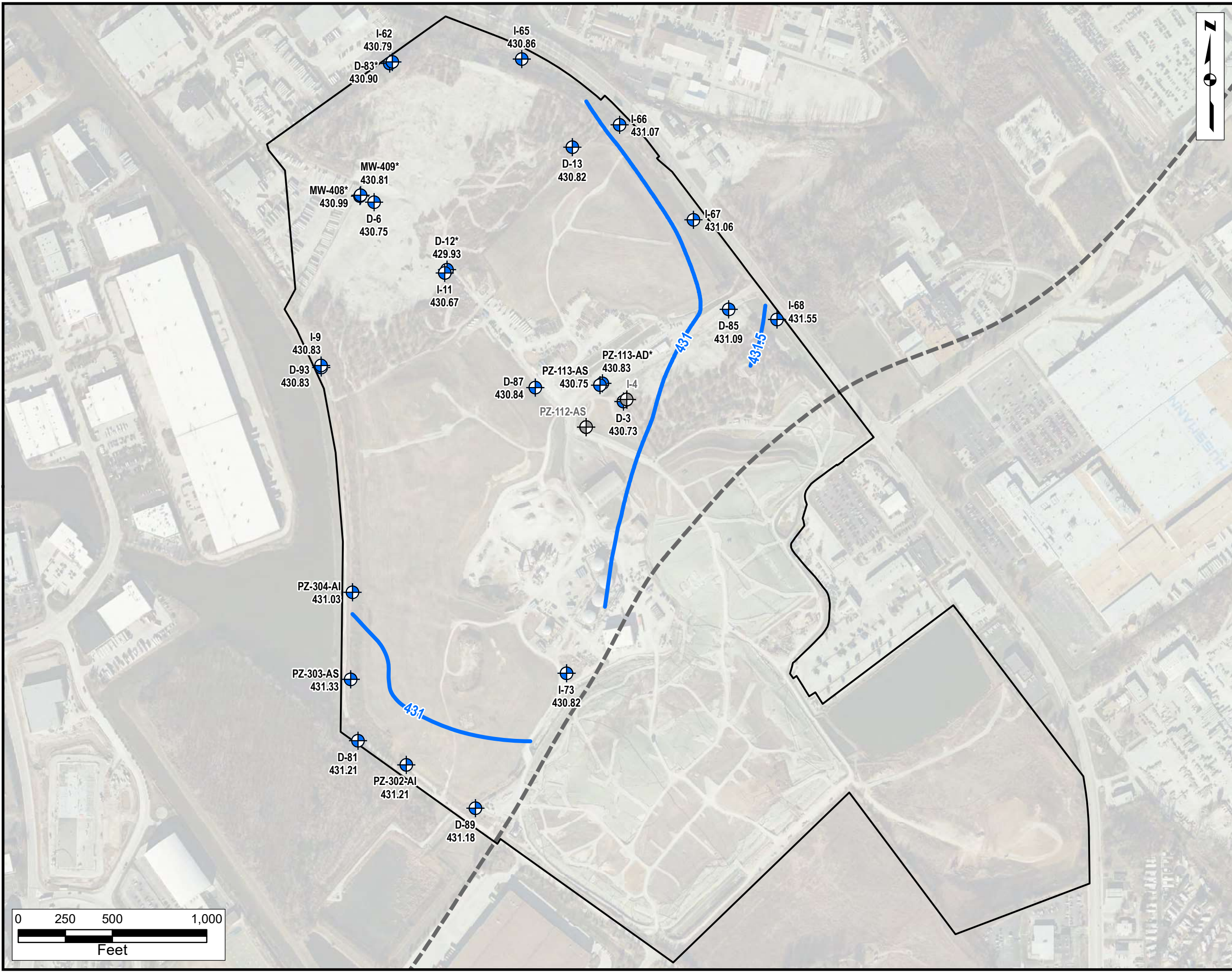
- Well Location
- Inactive Well Location
- 456.87 Groundwater Elevation (ft. amsl)
- Groundwater Elevation Contour
- Edge of Alluvium (approximate)
- Superfund Site Boundary

NOTES:

1. Aerial Imagery: Cooper Aerial Surveys Inc., from December 10, 2020
2. amsl = Above Mean Sea Level
3. * = Well measurement not used in contouring.
4. For well clusters, the lowest value was included during contouring.
5. The 2021 alluvium potentiometric maps were prepared based on a limited data set which did not include any surface water elevation data.
6. At the time of 2021 reporting, groundwater elevation data within the alluvium were plotted as a single hydrostratigraphic unit; therefore, the shallow, intermediate, and deep alluvium wells were combined. During 2021, significant subsurface characterization activities were completed, generating a high-resolution dataset that was interpreted to define environmental sequence stratigraphy at the site. Detailed evaluation of the influence of the stratigraphic units on groundwater flow is in progress.

Figure 7a: Alluvium Potentiometric Surface Map January 2021
West Lake Landfill OU-3
Bridgeton, Missouri





Legend

- Well Location
- Inactive Well Location
- 456.87 Groundwater Elevation (ft. amsl)
- Groundwater Elevation Contour
- Edge of Alluvium (approximate)
- Superfund Site Boundary

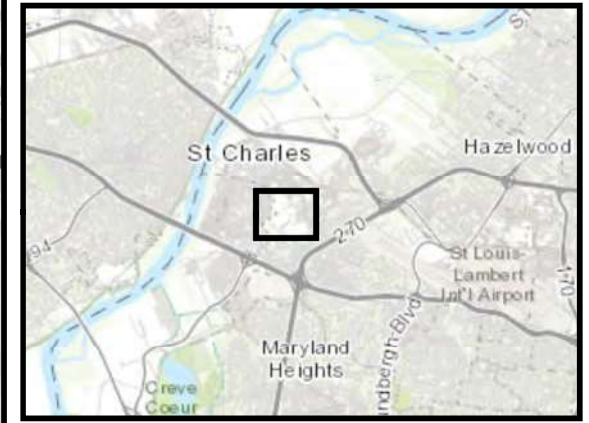
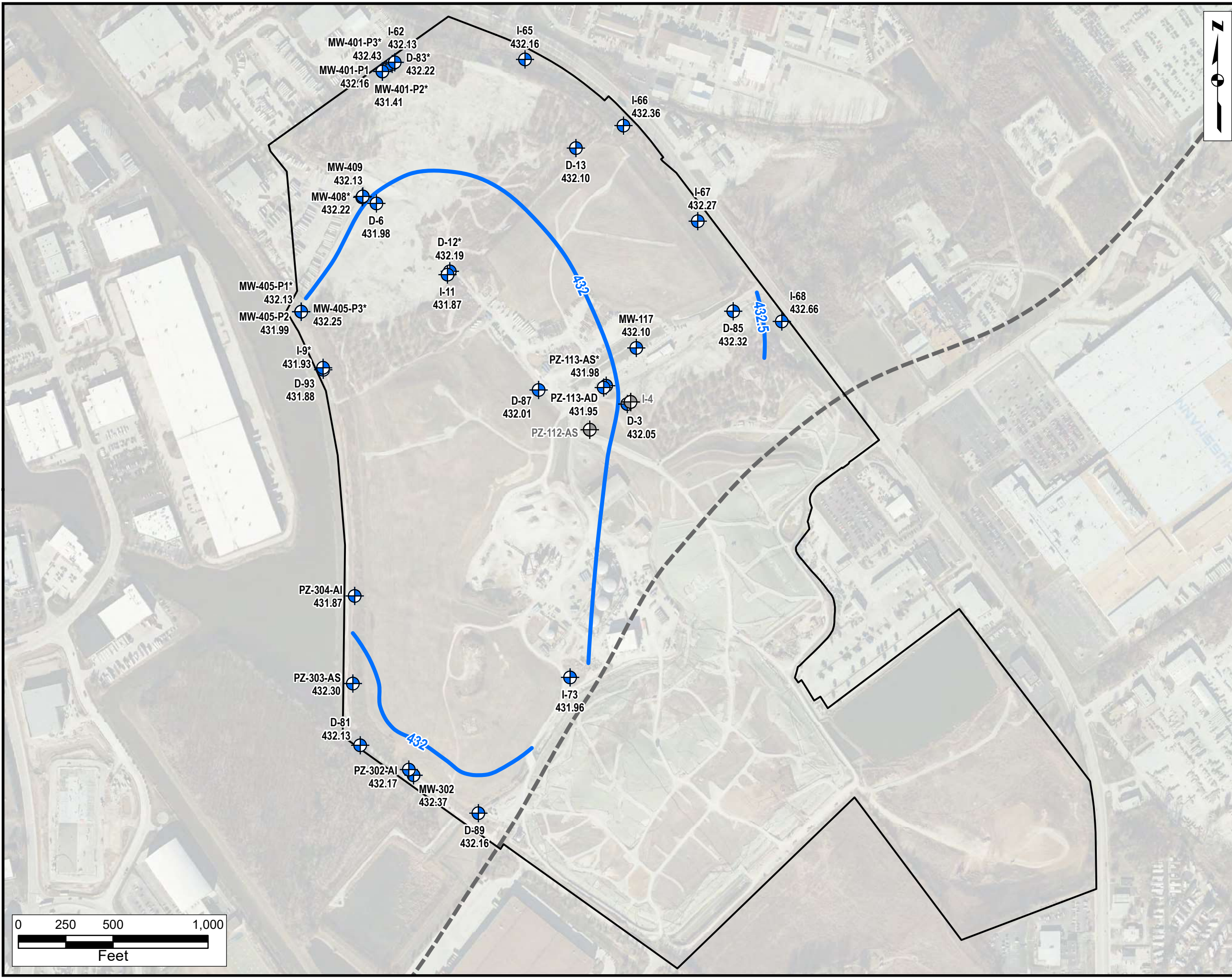
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Figure 7c: Alluvium Potentiometric Surface Map
March 2021
West Lake Landfill OU-3
Bridgeton, Missouri



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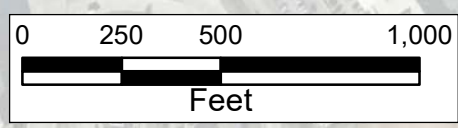

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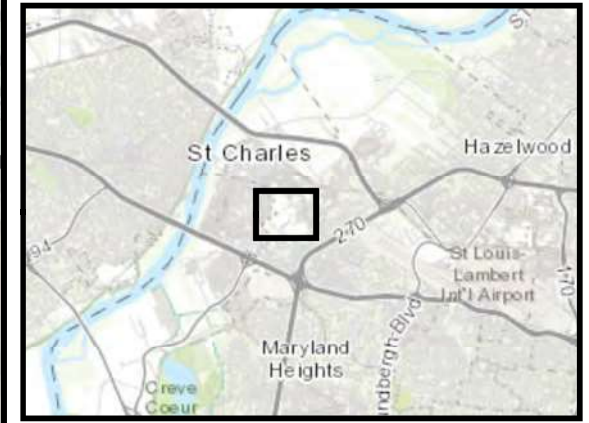
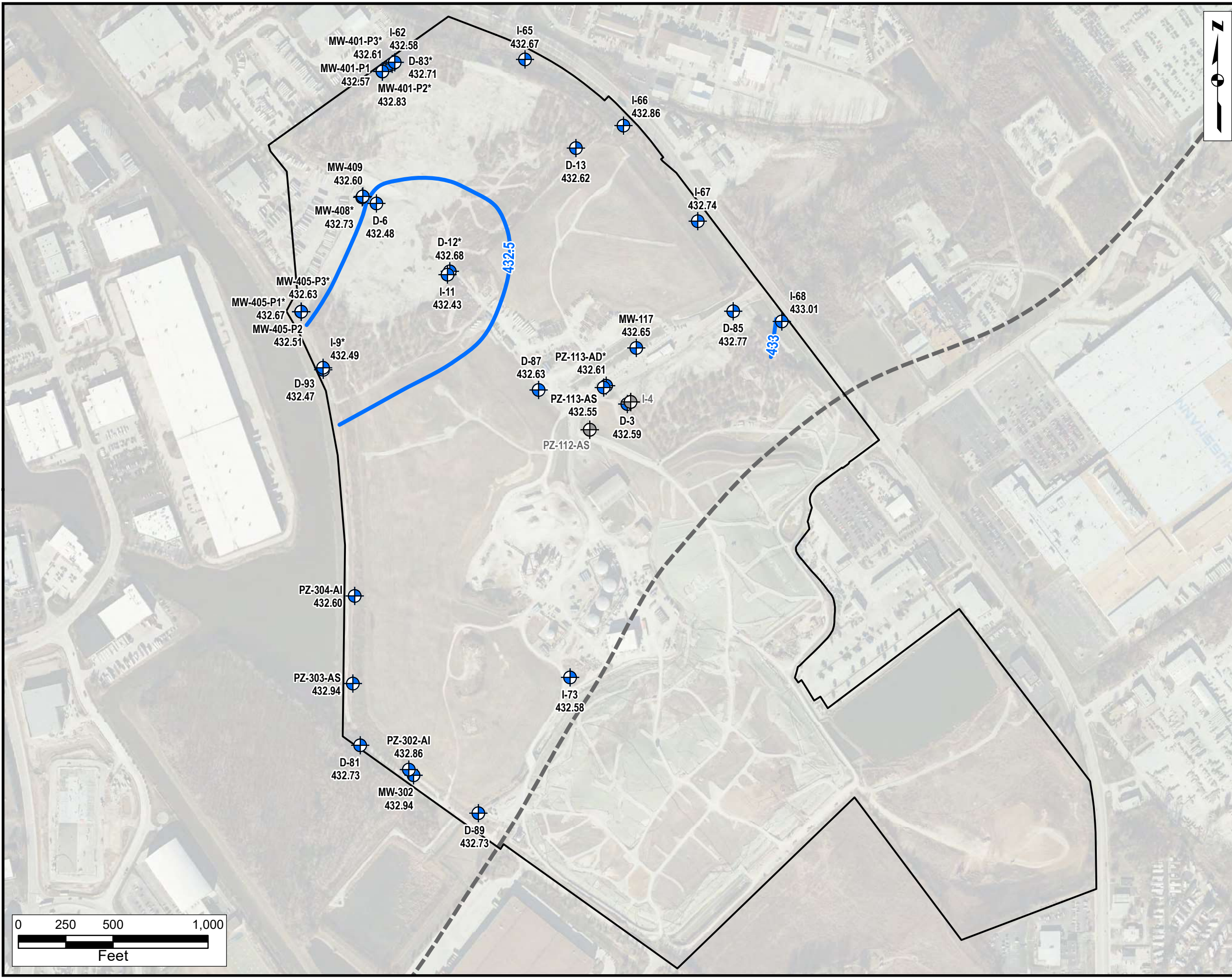
- Well Location
- Inactive Well Location
- 432.57 Groundwater Elevation (ft. amsl)
- Groundwater Elevation Contour
- Edge of Alluvium (approximate)
- Superfund Site Boundary

NOTES:

1. Aerial Imagery: Cooper Aerial Surveys Inc., from December 10, 2020
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Figure 7d: Alluvium Potentiometric Surface Map April 2021
West Lake Landfill OU-3
Bridgeton, Missouri





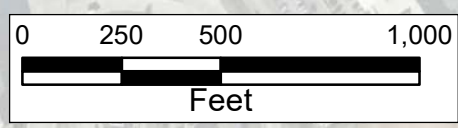

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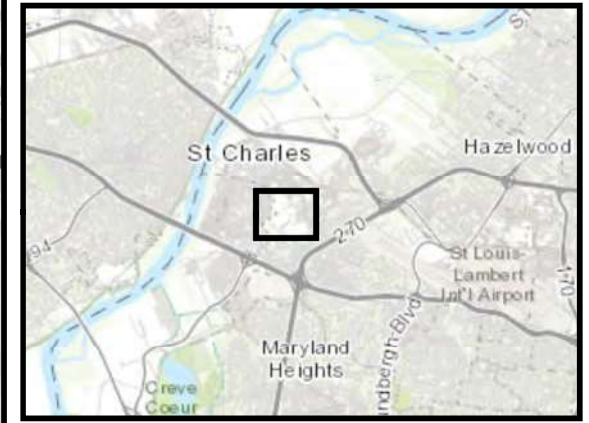
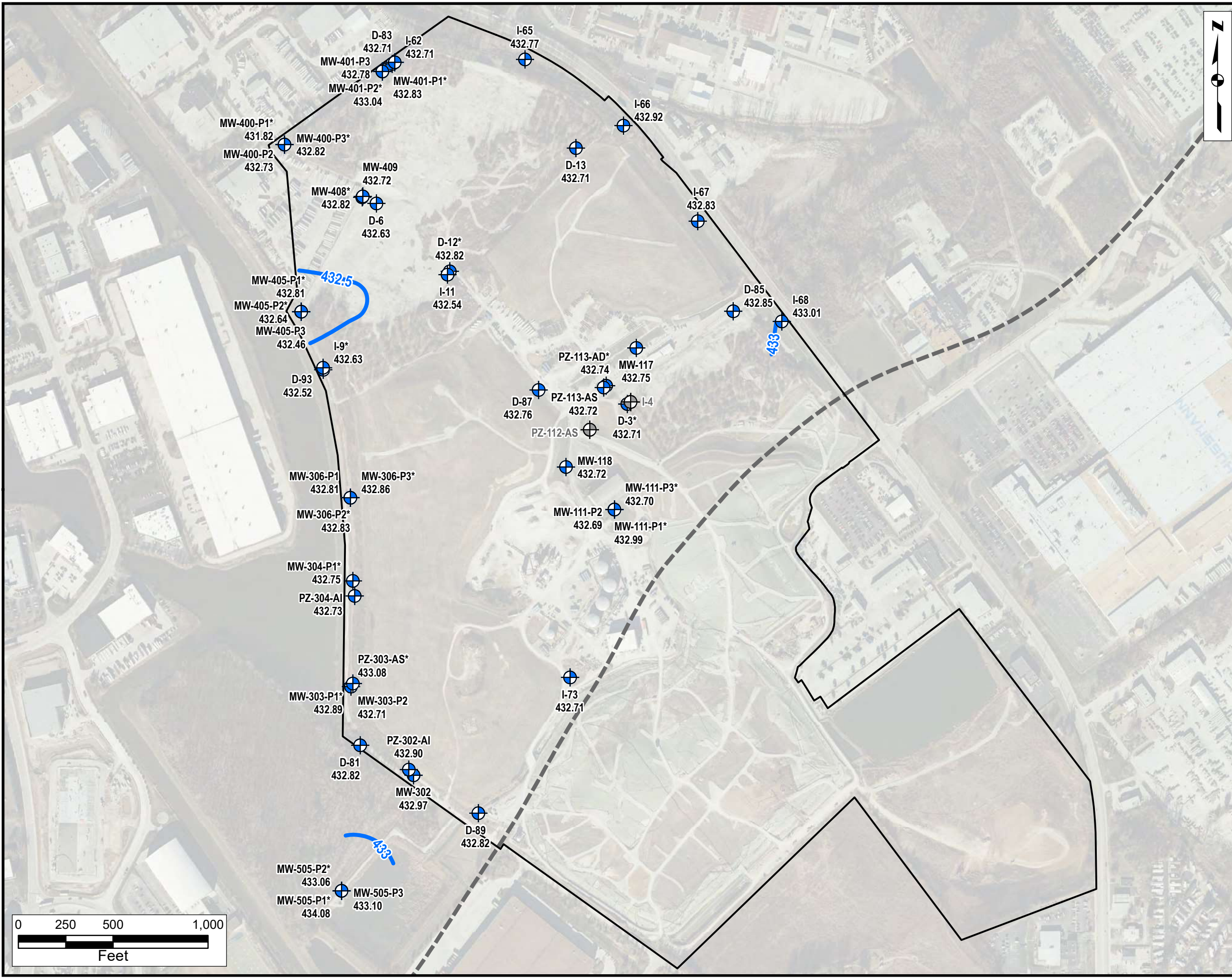
- Well Location
- Inactive Well Location
- 456.87 Groundwater Elevation (ft. amsl)
- Groundwater Elevation Contour
- Edge of Alluvium (approximate)
- Superfund Site Boundary

NOTES:

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Figure 7e: Alluvium Potentiometric Surface Map May 2021
West Lake Landfill OU-3
Bridgeton, Missouri






Legend

- Well Location
- Inactive Well Location
- 456.87 Groundwater Elevation (ft. amsl)
- Groundwater Elevation Contour
- Edge of Alluvium (approximate)
- Superfund Site Boundary

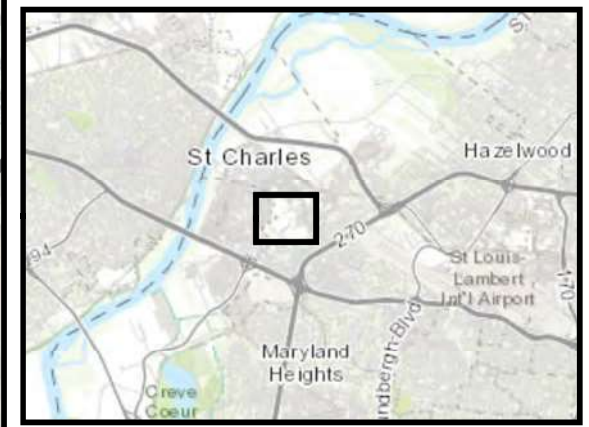
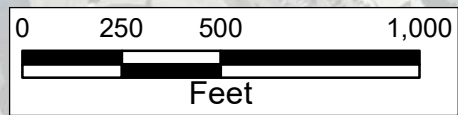
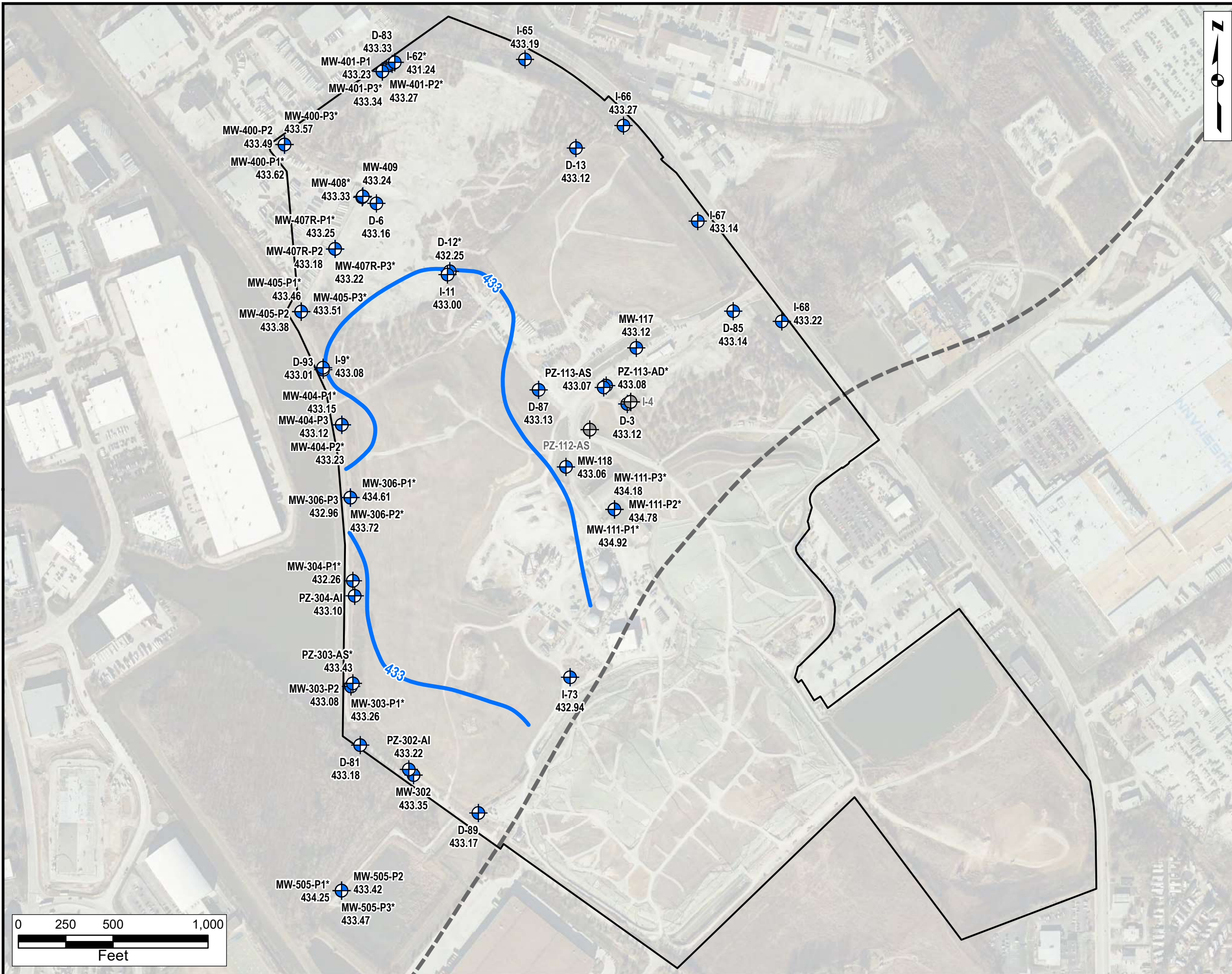
NOTES:

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Figure 7f: Alluvium Potentiometric Surface Map June 2021
West Lake Landfill OU-3
Bridgeton, Missouri



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Legend

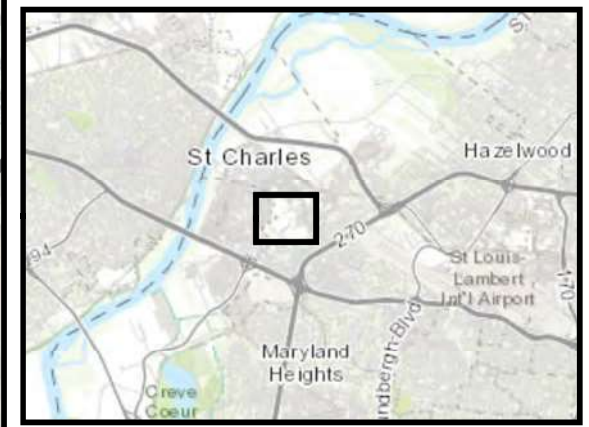
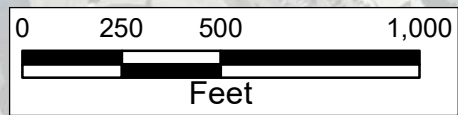
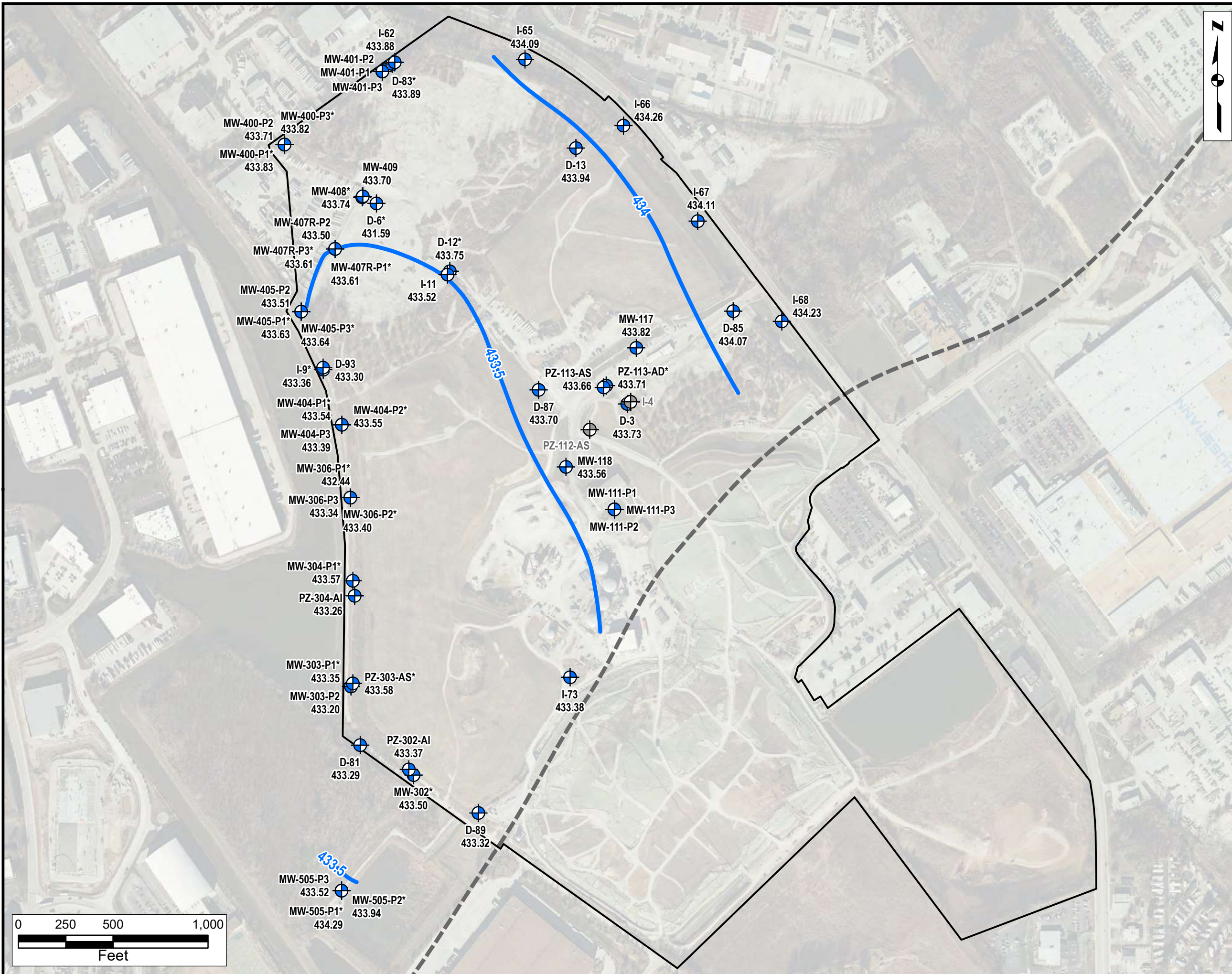
- Well Location
- Inactive Well Location
- 456.87 Groundwater Elevation (ft. amsl)
- Groundwater Elevation Contour
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Figure 7g: Alluvium Potentiometric Surface Map July 2021
West Lake Landfill OU-3
Bridgeton, Missouri

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Legend

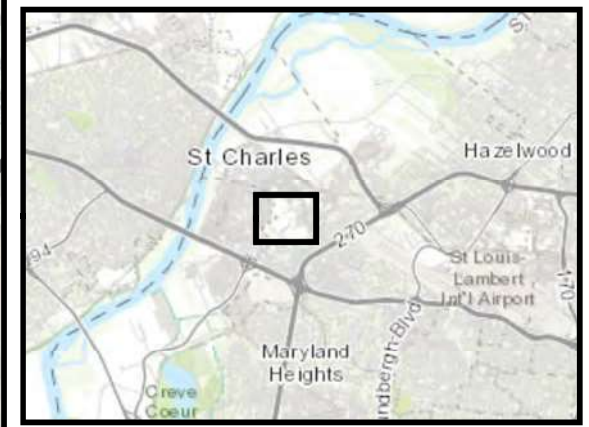
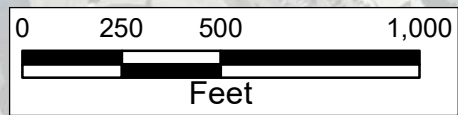
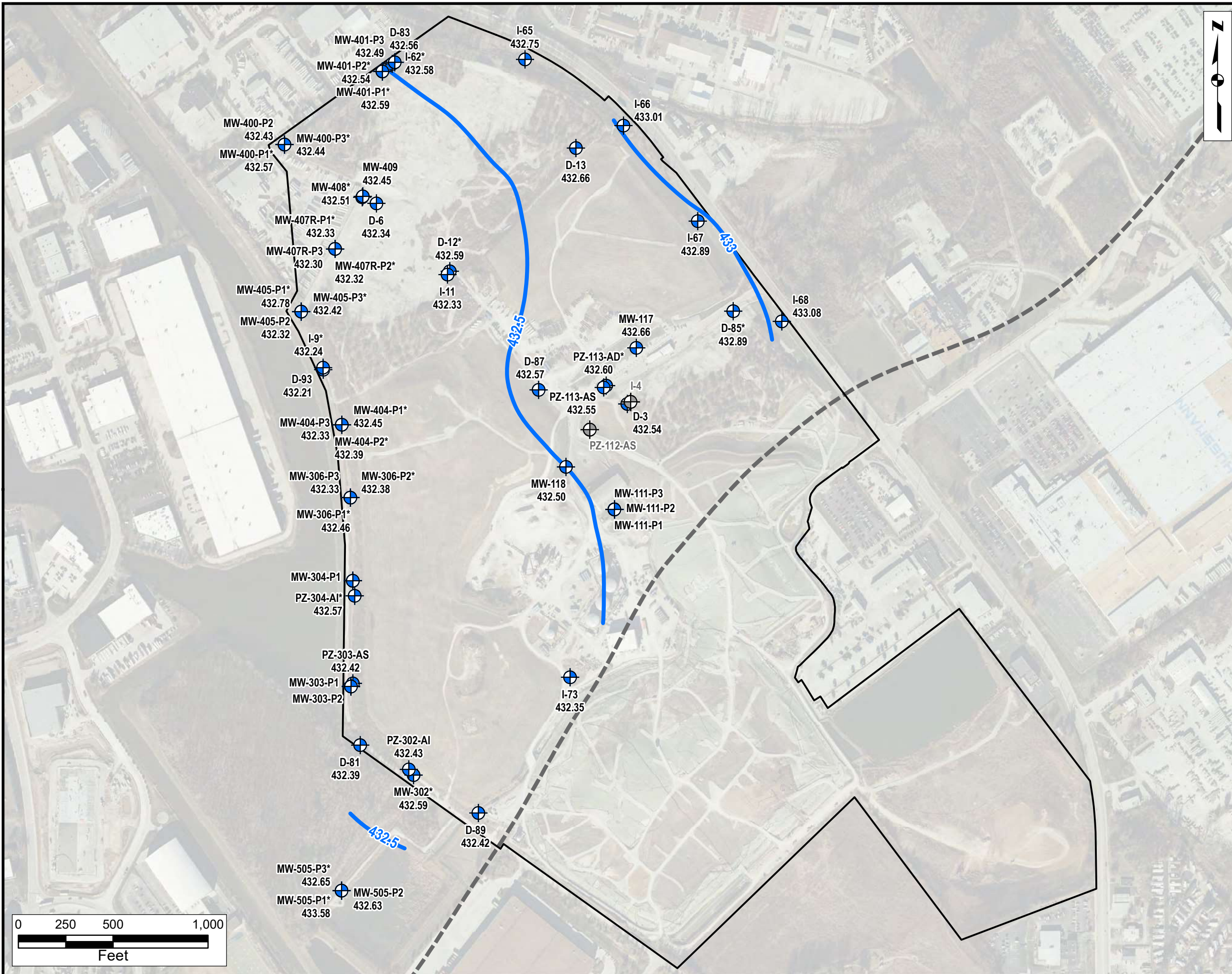
- Well Location
- Inactive Well Location
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Figure 7h: Alluvium Potentiometric Surface Map
August 2021
West Lake Landfill OU-3
Bridgeton, Missouri

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Legend

- Well Location
- Inactive Well Location
- 432.57 Groundwater Elevation (ft. amsl)
- Groundwater Elevation Contour
- Edge of Alluvium (approximate)
- Superfund Site Boundary

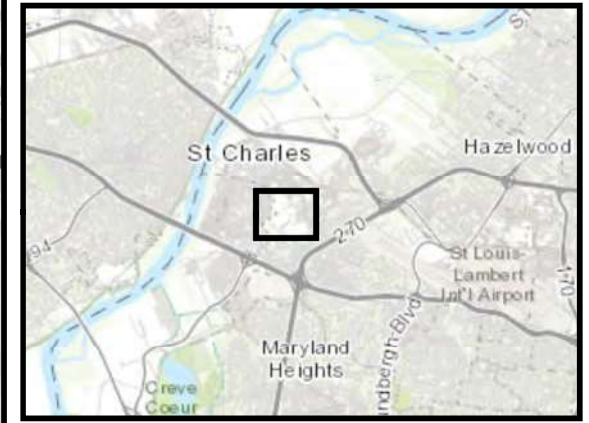
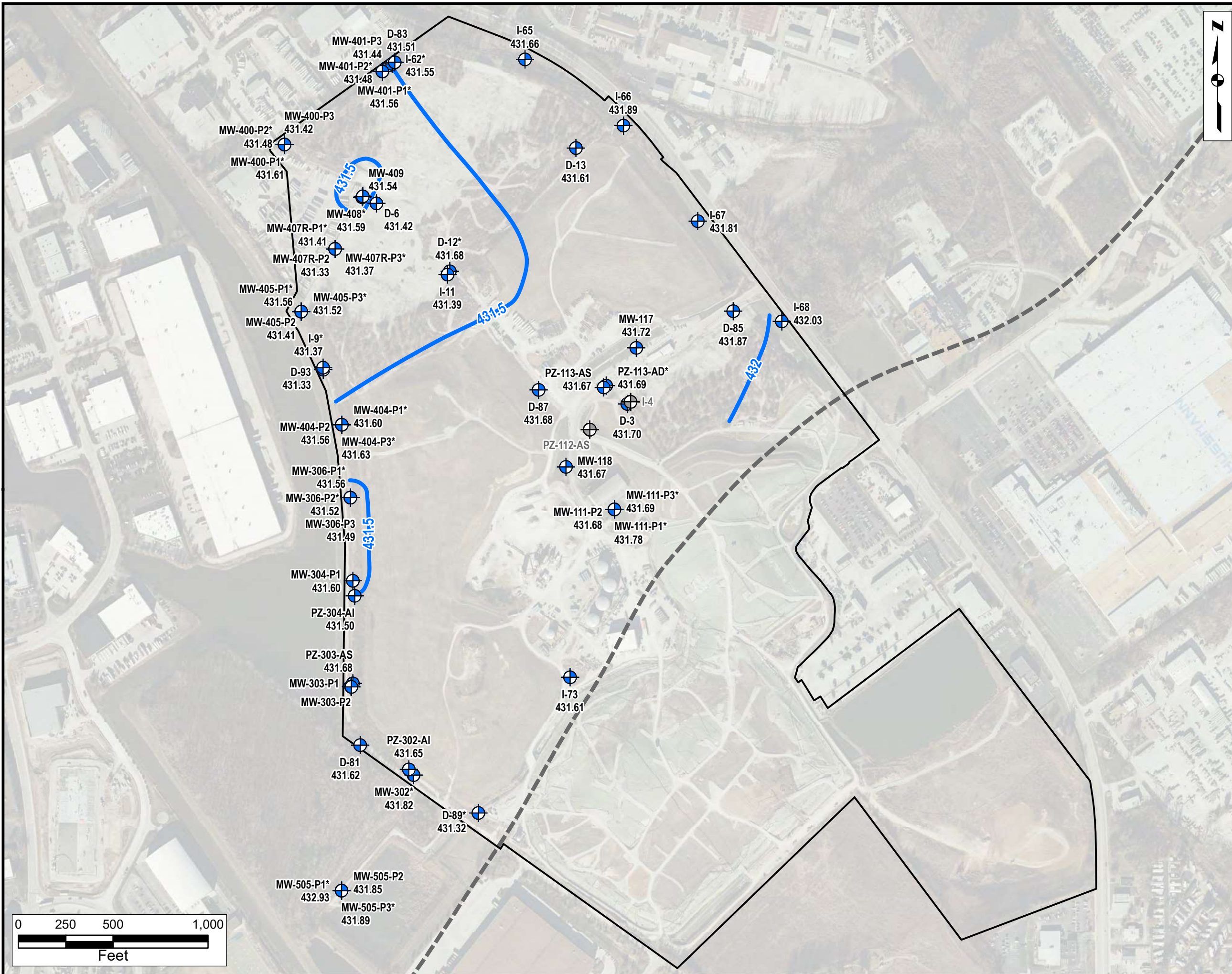
NOTES:

1. Aerial Imagery: Cooper Aerial Surveys Inc., from December 10, 2020
2. amsl = Above Mean Sea Level
3. * = Well measurement not used in contouring.
4. For well clusters, the lowest value was included during contouring.
5. The 2021 alluvium potentiometric maps were prepared based on a limited data set which did not include any surface water elevation data.
6. At the time of 2021 reporting, groundwater elevation data within the alluvium were plotted as a single hydrostratigraphic unit; therefore, the shallow, intermediate, and deep alluvium wells were combined. During 2021, significant subsurface characterization activities were completed, generating a high-resolution dataset that was interpreted to define environmental sequence stratigraphy at the site. Detailed evaluation of the influence of the stratigraphic units on groundwater flow is in progress.

Figure 7i: Alluvium Potentiometric Surface Map September 2021
West Lake Landfill OU-3
Bridgeton, Missouri



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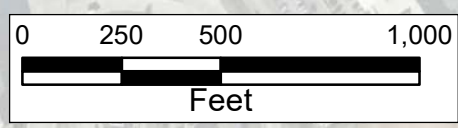
Legend

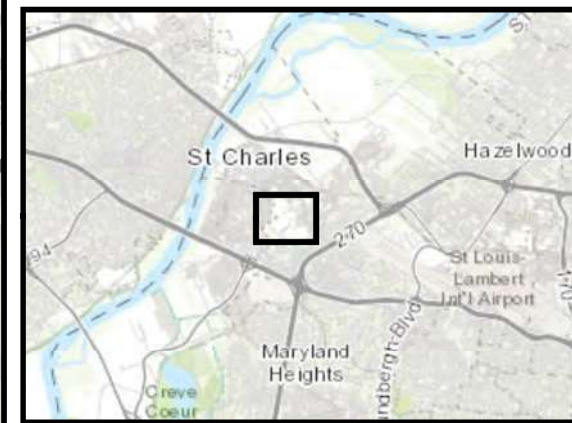
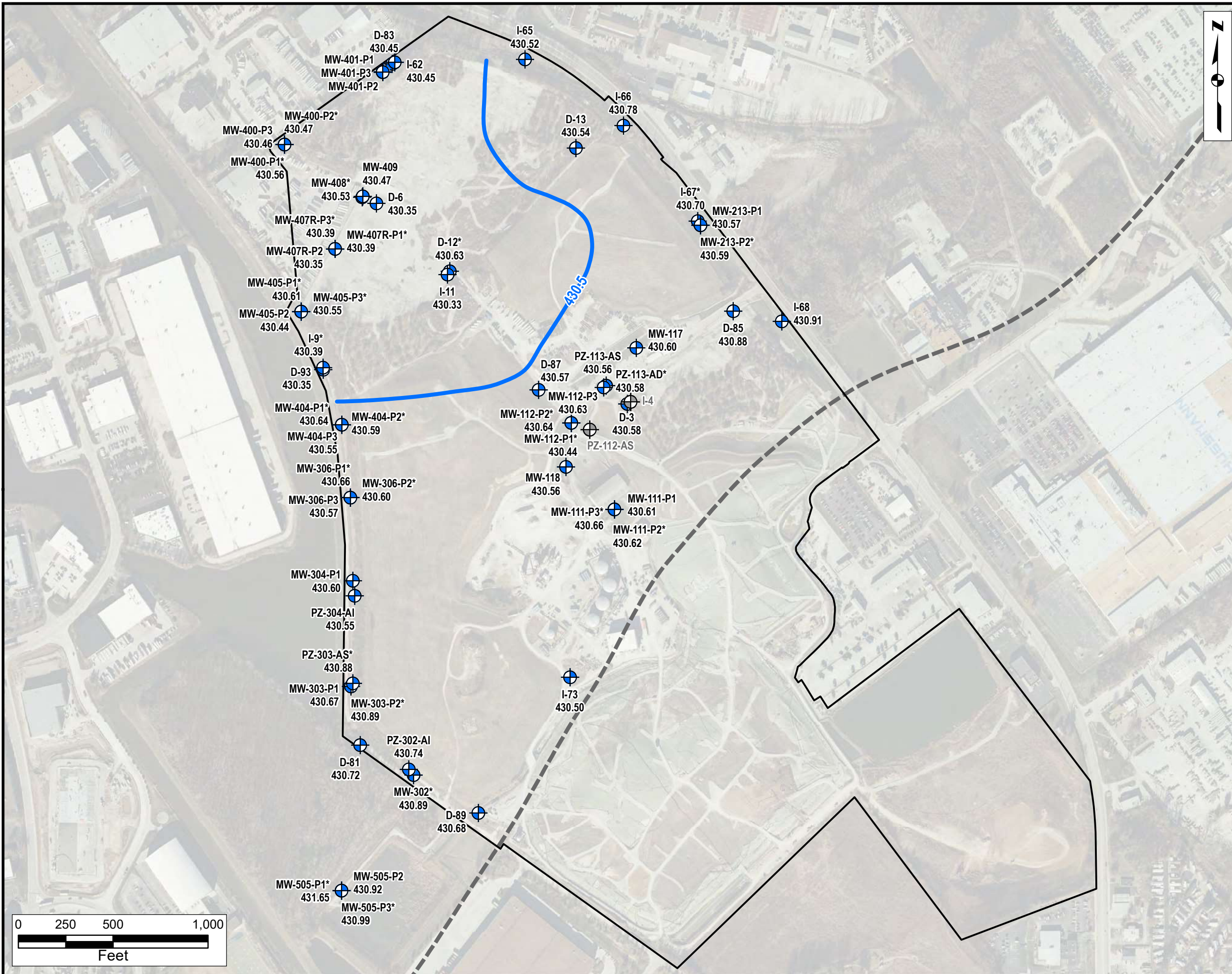
- Well Location
- Inactive Well Location
- 456.87 Groundwater Elevation (ft. amsl)
- Groundwater Elevation Contour
- Edge of Alluvium (approximate)
- Superfund Site Boundary

NOTES:

1. Aerial Imagery: Cooper Aerial Surveys Inc., from December 10, 2020
2. amsl = Above Mean Sea Level
3. * = Well measurement not used in contouring.
4. For well clusters, the lowest value was included during contouring.
5. The 2021 alluvium potentiometric maps were prepared based on a limited data set which did not include any surface water elevation data.
6. At the time of 2021 reporting, groundwater elevation data within the alluvium were plotted as a single hydrostratigraphic unit; therefore, the shallow, intermediate, and deep alluvium wells were combined. During 2021, significant subsurface characterization activities were completed, generating a high-resolution dataset that was interpreted to define environmental sequence stratigraphy at the site. Detailed evaluation of the influence of the stratigraphic units on groundwater flow is in progress.

Figure 7j: Alluvium Potentiometric Surface Map October 2021
West Lake Landfill OU-3
Bridgeton, Missouri





Legend

- Well Location
- Inactive Well Location
- 430.5 Groundwater Elevation (ft. amsl)
- Groundwater Elevation Contour
- Edge of Alluvium (approximate)
- Superfund Site Boundary

NOTES:

1. Aerial Imagery: Cooper Aerial Surveys Inc., from December 10, 2020
2. amsl = Above Mean Sea Level
3. * = Well measurement not used in contouring.
4. For well clusters, the lowest value was included during contouring.
5. The 2021 alluvium potentiometric maps were prepared based on a limited data set which did not include any surface water elevation data.
6. At the time of 2021 reporting, groundwater elevation data within the alluvium were plotted as a single hydrostratigraphic unit; therefore, the shallow, intermediate, and deep alluvium wells were combined. During 2021, significant subsurface characterization activities were completed, generating a high-resolution dataset that was interpreted to define environmental sequence stratigraphy at the site. Detailed evaluation of the influence of the stratigraphic units on groundwater flow is in progress.

Figure 7k: Alluvium Potentiometric Surface Map November 2021
West Lake Landfill OU-3
Bridgeton, Missouri



